

## CLAIM AMENDMENTS

Sir:

**In response to the Office Action of July 17, 2006, please amend the claims of the above-identified application as follows:**

1. (Currently Amended) A process for recycling protein waste comprising the steps of:

a) providing an apparatus comprising:

i. an enzymatic digest mixing assembly for mixing a medium and for adjusting its pH level;

ii. a mobile grinding assembly mounted on a movable platform and comprising grinding means for protein waste and mixing means for combining said ground protein waste and said enzymatic digest medium to produce a protein solubles mixture;

iii. a digesting and emulsification assembly;

iv. a drying system comprising a dough mixing apparatus, an extruder, and a drying apparatus;

[[a)] b) preparing an enzymatic digest medium by mixing within said enzymatic digest mixing assembly comprising an enzyme and a fluid waste, said fluid waste being substantially liquid and including protein, fat, and water and adjusting a pH level of said enzymatic digest medium to a pH between about 4 and about 6;

[[b)] c) grinding a generally solid protein waste using said grinding means and mixing said generally solid protein waste with said enzymatic digest medium

using said mixing means to produce [[a]] said protein solubles mixture comprising a mixture of said [[ground]] generally solid protein waste and said enzymatic digest medium;

[[c]] d maintaining said protein solubles mixture at a temperature optimal for enzymatic digestion using said digesting and emulsification assembly;

[[d]] e periodically recirculating said protein solubles mixture to insure complete enzymatic digestion;

[[e]] f emulsifying said protein solubles mixture using said digesting and emulsification assembly to disperse said protein, said fat, and said water to produce emulsified proteins;

[[f]] g allowing separation of said water into a water layer, removing said water layer, and recycling said water layer in preparing said enzymatic digest;

[[g]] h mixing said emulsified proteins with a carrier using said dough mixing apparatus;

[[h]] i extruding [[said]] a doughlike mixture using said extruder into a plurality of pellet-like pieces;

[[i]] j evenly drying said plurality of pellet-like pieces using said drying apparatus; and

[[j]] k sizing said plurality of pellet-like pieces to uniform size and retaining said uniformly sized pellet-like pieces.

2. (Currently Amended) The process for recycling protein waste as claimed in claim 1, wherein said fluid waste further includes [[is]] an inedible egg substance and the

step of preparing an enzymatic digest medium further comprises mixing at least one enzyme, said inedible egg substance, and at least one preservative.

3. (Currently Amended) The process for recycling protein waste as claimed in claim 2, wherein adjusting said pH level ~~comprising~~ comprises adding phosphoric acid or lactic acid.

4. (Currently Amended) The process for recycling protein waste as claimed in claim ~~[[1]]~~ 2, wherein said enzymatic digest medium comprises about ~~[[2]]~~ two pounds per ton of at least one preservative, about one and one half pounds per ton of ~~at least one enzyme~~ wherein said ~~at least one enzyme~~ comprises protease and ~~keritinase~~ keratinase, and about one thousand nine hundred ninety six pounds per ton of inedible egg substance.

5. (Previously Amended) The process for recycling protein waste as claimed in claim 1, wherein the step of mixing said protein waste with said enzymatic digest medium comprises recirculating said protein solubles mixture through a chopper pump to insure adequate grinding and thorough mixing with said enzymatic digest medium.

6. (Previously Amended) The process for recycling protein waste as claimed in claim 1, wherein the step of maintaining said protein solubles mixture at an optimal temperature is carried out by a heating element placed in a housing filled with water and surrounding a digester tank containing said protein solubles mixture and said optimal temperature is between about 90 degrees and 110 degrees Fahrenheit.

7. (Previously Amended) The process for recycling protein waste as claimed in claim 1, wherein said carrier further comprises ground wheat midds, ground corn midds, or soybean meal.

8. (Currently Amended) The process for recycling protein waste as claimed in claim 1, wherein the step of evenly drying said plurality of pellet-like pieces comprises subjecting said pellet-like pieces to at least one heat zone for heating said pellet-like pieces, at least one cool zone for returning the pellet-like pieces to at least about within ten degrees of ambient temperature, and alternating airflow to provide uniformity in drying.

9. (Currently Amended) The process for recycling protein waste as claimed in claim 1, wherein the step of sizing said plurality of pellet-like pieces is carried out by moving said pieces through a roller mill for uniform sizing and then using a vibrating screen to retain only said pellet-like pieces of uniform size.

10. (Previously Amended) The process for recycling protein waste as claimed in claim 1, wherein the step of preparing an enzymatic digest medium comprises mixing at least one enzyme, an inedible egg substance, and at least one preservative and adjusting said pH level to between about 4 and 6 by adding phosphoric acid; the step of grinding and mixing said protein waste and said enzymatic digest medium is carried out by a grinder and recirculation through a chopper pump; and the step of maintaining said protein solubles mixture at an optimal temperature comprises using a heating element to provide heat required to maintain temperature between about 90 degrees and 110 degrees Fahrenheit.

11. (Previously Amended) The process for recycling protein waste as claimed in claim 10, wherein the step of drying said plurality of pellet-like pieces comprises heating said pellet-like pieces, cooling said pellet-like pieces, and providing alternating air flow to said pellet-like pieces.

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Currently Amended) The process for recycling protein waste as claimed in claim 2, wherein said at least one enzyme comprises protease and ~~keritinase~~ keratinase and wherein said acidic solution comprises phosphoric acid or lactic acid.

18. (Previously Amended) The process for recycling protein waste as claimed in claim 1, wherein said step of evenly drying further comprises providing air flow to said pellet-like pieces.

19. (Previously Amended) The process for recycling protein waste as claimed in claim 1, wherein said step of periodically recirculating said protein solubles mixture comprises recirculation for one hour every twelve hours for three to four days.

20. (Currently amended) The process for recycling protein waste as claimed in claim 1, wherein said carrier comprises a high surface area to volume ratio [[which]] sufficient to absorb[[s]] at least some moisture from said emulsified proteins and produces a doughlike mixture.

21. (Canceled)

22. (Canceled)

23. (Canceled)

24. (Canceled)

25. (Canceled)

26. (New) A process for recycling protein waste comprising the steps of:
- a) providing a mobile grinding assembly mounted on a movable platform and comprising grinding means for protein waste and mixing means for combining said ground protein waste and said enzymatic digest medium to produce a protein solubles mixture;
  - b) preparing an enzymatic digest medium by mixing an enzyme and a fluid waste, said fluid waste being substantially liquid and including protein, fat, and water and adjusting a pH level of said enzymatic digest medium to a pH between about 4 and about 6;
  - c) grinding a generally solid protein waste using said grinding means and mixing said generally solid protein waste with said enzymatic digest medium using said mixing means to produce a protein solubles mixture comprising a mixture of said generally solid protein waste and said enzymatic digest medium;
  - d) maintaining said protein solubles mixture at a temperature optimal for enzymatic digestion;
  - e) periodically recirculating said protein solubles mixture to insure complete enzymatic digestion;
  - f) emulsifying said protein solubles mixture to disperse said protein, said fat, and said water to produce emulsified proteins;
  - g) allowing separation of said water into a water layer, removing said water layer, and recycling said water layer in preparing said enzymatic digest;
  - h) mixing said emulsified proteins with a carrier using said dough mixing apparatus;

- i) extruding a doughlike mixture into a plurality of pellet-like pieces;
- j) evenly drying said plurality of pellet-like pieces; and
- k) sizing said plurality of pellet-like pieces to uniform size and retaining said uniformly sized pellet-like pieces.

27. (New) The process for recycling protein waste as claimed in claim 26, wherein the step of mixing said protein waste with said enzymatic digest medium comprises recirculating said protein solubles mixture through a chopper pump to insure adequate grinding and thorough mixing with said enzymatic digest medium.

28. (New) The process for recycling protein waste as claimed in claim 26, wherein the step of maintaining said protein solubles mixture at an optimal temperature is carried out by a heating element placed in a housing filled with water and surrounding a digester tank containing said protein solubles mixture.

29. (New) The process for recycling protein waste as claimed in claim 1, wherein the step of evenly drying said plurality of pellet-like pieces comprises subjecting said pellet-like pieces to at least one heat zone for heating said pellet-like pieces, at least one cool zone for returning the pellet-like pieces to at least about within ten degrees of ambient temperature, and alternating airflow to provide uniformity in drying.

30. (New) The process for recycling protein waste as claimed in claim 1, wherein the step of sizing said plurality of pellet-like pieces is carried out by moving said pieces through a roller mill for uniform sizing and then using a vibrating screen to retain only said pellet-like pieces of uniform size.

31. (New) A process for recycling protein waste comprising the steps of:

- a) providing an apparatus comprising:

- i. an enzymatic digest mixing assembly for mixing a medium and for adjusting its pH level;
  - ii. a grinding means for protein waste;
  - iii. mixing means for combining said ground protein waste and said enzymatic digest medium to produce a protein solubles mixture;
  - iv. a digesting and emulsification assembly
  - v. a drying system comprising a dough mixing apparatus, an extruder, and a drying apparatus; and
- b) preparing an enzymatic digest medium by mixing within said enzymatic digest mixing assembly an enzyme and a fluid waste, said fluid waste being substantially liquid and including protein, fat, and water and adjusting a pH level of said enzymatic digest medium to a pH between about 4 and about 6;
- c) grinding a generally solid protein waste using said grinding means and mixing said generally solid protein waste with said enzymatic digest medium using said mixing means to produce said protein solubles mixture comprising a mixture of said generally solid protein waste and said enzymatic digest medium;
- d) maintaining said protein solubles mixture at a temperature optimal for enzymatic digestion using said digesting and emulsification assembly;
- e) periodically recirculating said protein solubles mixture to insure complete enzymatic digestion;



- f) emulsifying said protein solubles mixture using said digesting and emulsification assembly to disperse said protein, said fat, and said water to produce emulsified proteins;
- g) allowing separation of said water into a water layer, removing said water layer, and recycling said water layer in preparing said enzymatic digest;
- h) mixing said emulsified proteins with a carrier using said dough mixing apparatus;
- i) extruding a doughlike mixture using said extruder into a plurality of pellet-like pieces;
- j) evenly drying said plurality of pellet-like pieces using said drying apparatus; and
- k) sizing said plurality of pellet-like pieces to uniform size and retaining said uniformly sized pellet-like pieces.